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Annual meeting of the International Honey Commission

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Edited by

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| OC3. | Ana Paula Pereira; Luís G. Dias; João Carlos Silva; Leticia M. Estevinho | Propolis: antimicrobial activity, phenolic compounds and role in the inflammation. |
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| OC6. | Birgit Lichtenberg-Kraag; Roberto Piro; Beatrix Brinkmann; Lucia Piana; Patricia Beaune; Verena Kilchenmann; Christina Kast | Determination of physicochemical characteristics of honey comparing reference methods and fourier transform infrared spectroscopy performed in four different laboratories. |
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OC12. Sugar analysis by a multi-sensor system: applying to honey samples.

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One of the emerging approaches for analysis of liquid samples with complex matrices is the Electronic Tongue (ET) since it allows evaluating tastes by calibration, mimicking the human tongue. The ET records a pattern of signals that depends on the matrix solution composition, which information is extracted into qualitative and quantitative information by multivariate statistical methods.

The chemical sensors used in these devices, usually, differ from those of the traditional chemical sensors because they have the ability to obtain global information about the solution (cross-sensibility sensors, the signal results from sensitization to various substances). Selective-sensors (high selectivity for detecting substances) may also be included in the analytical system, allowing cross-information as well as specific information about the sample matrix.

Recent works with ET showed the wide range of applications such as, classification of honey (Dias, 2008), detection of milk adulterations (Dias, 2009), detection of protein levels (gliadins) in different foodstuffs (Peres, 2011) and classification of soft drinks accordingly to different added fruit juice contents (Dias, 2011).

Moreover, the analytical performance suggests that ETs could have a wider set of applications as, quantification if the substances to be analysed are major compounds in the sample.

With the aim of test this hypothesis, an all-solid-state potentiometric ET was developed and has being tested to quantify fructose and glucose contents, which are important constituents of the food products, as an alternative tool for the quantification of these sugars in real samples.

Several multivariate data treatments for quantitative analysis of these two sugars (MLR, PLS and others) are considered as well as, their application to the results obtained in honey samples analysis.

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- 2) Dias, L A; Peres, A M; Veloso, A C A; Reis, F S; Vilas-Boas, M; Machado, A A S C (2009) An electronic tongue taste evaluation: identification of goat milk adulteration with bovine milk, *Sensors & Actuators: B. Chemical* 136: 209-217.
- 3) Peres, A M; Dias, L G; Veloso, A C A.; Meirinho, S G; Sá Morais, J; Machado, A A S C (2011) An electronic tongue for gliadins semi-quantitative detection in foodstuffs, *Talanta* 83: 857-864.
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